Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Annual Assessment of the Status of	)	MB Docket No. 15-158
Competition in the Market for the	)	
Delivery of Video Programming	)	

COMMENTS OF
THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

Jim Partridge
Vice President
Industry & Technical Analysis

Galen Pospisil
Research Assistant

August 21, 2015

Rick Chessen
Michael S. Schooler
Loretta Polk
National Cable & Telecommunications Association
25 Massachusetts Avenue, N.W. – Suite 100
Washington, D.C. 20001-1431
(202) 222-2445

TABLE OF CONTENTS

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Annual Assessment of the Status of	)	MB Docket No. 15-158
Competition in the Market for the	)	
Delivery of Video Programming	)	

COMMENTS OF
THE NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

The National Cable & Telecommunications Association ("NCTA")[1] hereby submits its comments on the Public Notice in the above-captioned proceeding.[2]

INTRODUCTION AND SUMMARY

After 16 annual video competition reports released by the Commission, it goes without saying that competition has fully taken hold in the market for the delivery of video programming. In particular, competition among multichannel video programming distributors (MVPDs) is more vibrant than ever, with incumbent cable operators, DBS companies, telephone companies, and over builders battling for customers. In addition, the amount, quality, and diversity of programming available to consumers – and the diverse ways in which MVPDs, program networks, and others are making such programming available to consumers – is greater than ever. In these comments, we update the Commission on this competitive state of affairs.

Meanwhile, as we also show, Internet Protocol ("IP") technology and the Internet continue to transform the video marketplace, not only by adding an almost infinite array of

---

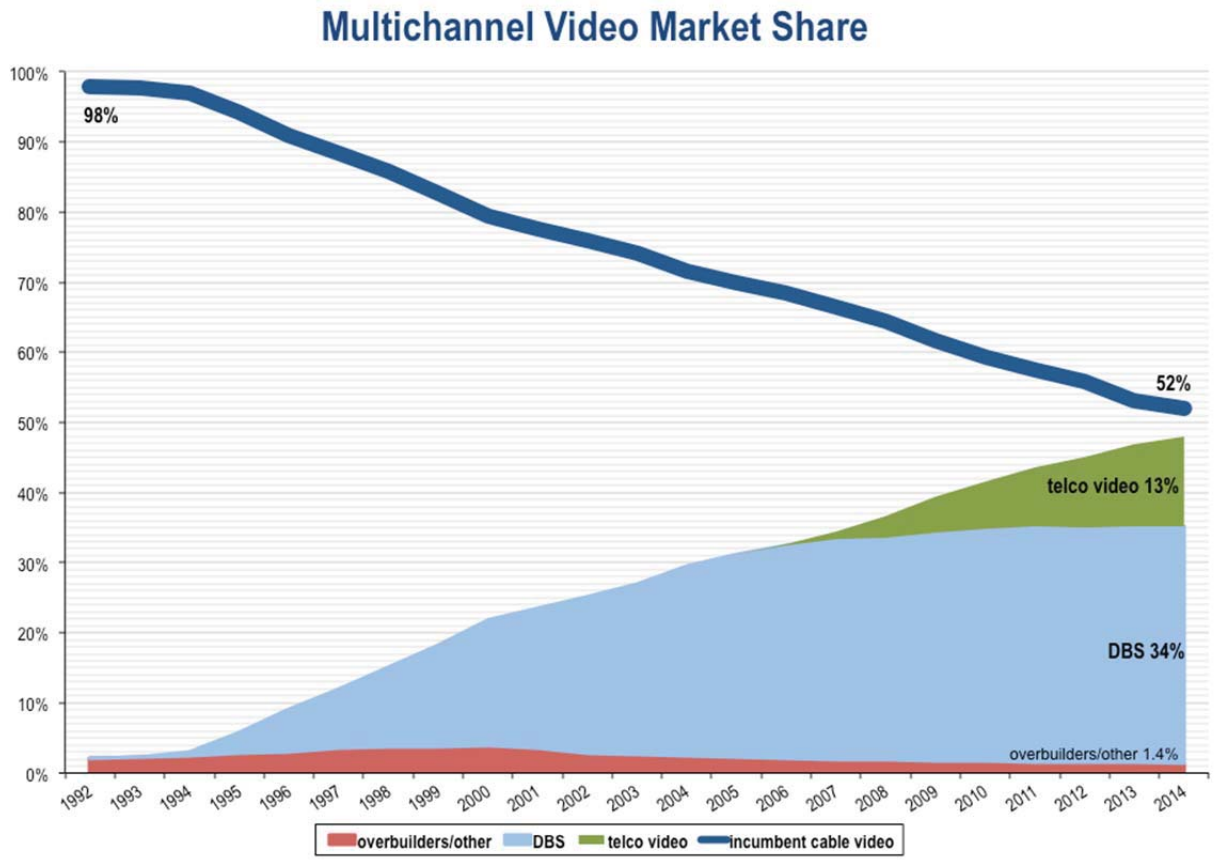
[1] NCTA is the principal trade association for the U.S. cable industry, representing cable operators serving more than 80 percent of the nation's cable television households and more than 200 cable program networks. The cable industry is the nation's largest provider of broadband service after investing over $230 billion since 1996 to build two-way interactive networks with fiber optic technology. Cable companies also provide state-of-the-art competitive voice service to approximately 30 million customers.

[2] FCC, Public Notice, *Media Bureau Seeks Comment On The Status of Competition In The Market For The Delivery Of Video Programming, 30 FCC Rcd 7114 (2015).*

viewing options for consumers, but also by encouraging MVPDs to adopt innovative approaches that enable customers to view their programming on IP-enabled devices inside and outside the home on the same screens on which they watch programming from online providers. The landscape that led Congress, more than two decades ago, to enact regulatory provisions intended to ensure at least a modicum of competition in the video marketplace, is now an unrecognizable relic of the past. As facilities-based MVPDs and an ever-expanding array of new online services compete to attract and retain viewers, it is now competition itself, rather than regulation, that can and should drive the choices and innovations in programming, packaging, pricing and technology designed to provide the greatest value to consumers.

I. COMPETITION IS NOW THE WELL-ESTABLISHED HALLMARK OF THE MVPD MARKETPLACE.

As NCTA and the Commission have documented every year since Congress mandated these inquiries and reports on video competition, competition from DBS, telephone companies, and over builders, has continuously eroded incumbent cable operators' share of the MVPD marketplace. In 1992, almost all households that subscribed to an MVPD service chose their incumbent franchised cable operator and few had any other options available. But DBS soon appeared on the scene, making a second and third choice available to every household. In many areas, telcos and over builders have presented a fourth and sometimes fifth choice. Thus, competition has long since taken hold in the MVPD marketplace – and still new competitors continue to take market share from incumbent cable operators while competing, as well, with each other.



Source: NCTA Analysis of SNL Kagan Data

Incumbent cable operators now serve barely half of all MVPD subscribers.[3] Meanwhile, more than 34% of subscribers are served by the two national DBS companies. In 2014, the two DBS companies' nearly 20-year steady increase in subscribership slowed markedly for the first time, with DBS gaining about 20,000 subscribers year-over-year.[4] Despite the sluggish growth in subscriber numbers, the two companies continued to serve 34 million customers and ranked as the second and third largest MVPDs even before DirecTV's recent merger with AT&T, which will make the combined entity the nation's largest MVPD.[5]

---

[3] NCTA Analysis of SNL Kagan data. As of the end of 2014, cable operators served 52% of MVPD customers.

[4] NCTA Analysis of SNL Kagan data; s*ee also* Tony Lenoir, Ian Olgeirson, and Chris Young, *Q2 video market share: Big drop elevates specter of cord cutting*, SNL Kagan, Aug. 11, 2015 (showing multichannel video quarterly multichannel market share for Q2 2013 through Q2 2015).

[5] The statistics presented here are as of year-end 2014 and therefore do not take into account any effects of the AT&T-DirecTV merger.

The slowdown in DBS subscriber growth and their flat market share illustrates the vigor of competition from the other new competitors in the marketplace – the telephone companies and Google. As cable operators' share of multichannel customers continues to decline, the telephone companies' share continue to grow. As noted in our previous comments, telephone companies seriously entered the multichannel market in 2006 and have experienced a rapid growth that rivals the early days of the DBS industry.[6] Telco providers' share of multichannel customers continued its uninterrupted growth, growing to 13% by the end of 2014.

Meanwhile, Google Fiber, with a fiber-based video service and a broadband internet capable of Gigabit speeds, continues to deploy service to select new cities. Google Fiber is serving customers in Kansas City, Provo, Utah, and Austin, and has begun construction on networks in the Raleigh-Durham metro area, Atlanta, Nashville, Charlotte, and Salt Lake City, and Google has committed to deploying service to San Antonio.[7] Three additional cities are under consideration for further expansion.[8] Google Fiber, and other new entrants like it are providing new choices for video consumers, while older over builders such as WOW! and RCN continue to offer additional alternatives in areas around the country. In some areas, customers may have four or more facilities-based multichannel providers vying for their business.

As the Commission noted earlier this year, cable operators face effective competition in virtually every market in the country.[9] Competing MVPDs have at least 15 percent market share

---

6 NCTA Comments filed in MB Dkt. 14-16 at 4-6 (Mar. 21, 2014).

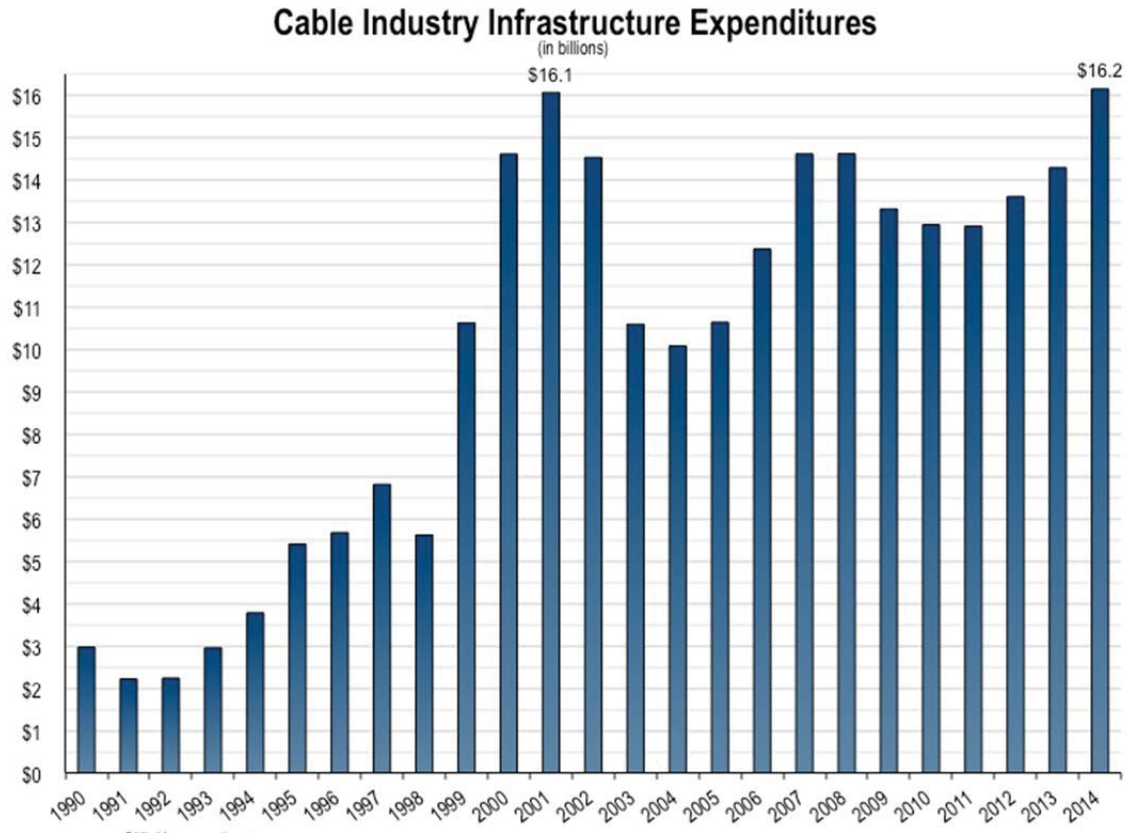
7 NCTA Analysis of SNL Kagan Data; *see also* Google Fiber, *Expansion Plans, at* https://fiber.google.com/newcities/ (last visited Aug. 17, 2015).

8 Google Fiber, *Expansion Plans, at* https://fiber.google.com/newcities/ (last visited Aug. 17, 2015).

9 *In re Amendment to the Commission's Rules Concerning Effective Competition; Implementation of Section 111 of the STELA Reauthorization Act,* Report and Order, 30 FCC Rcd 6574 ¶ 4.

– often significantly more – in each of the 210 Designated Market Areas (DMAs) across the nation.[10] Multichannel video competition is widespread and pervasive.

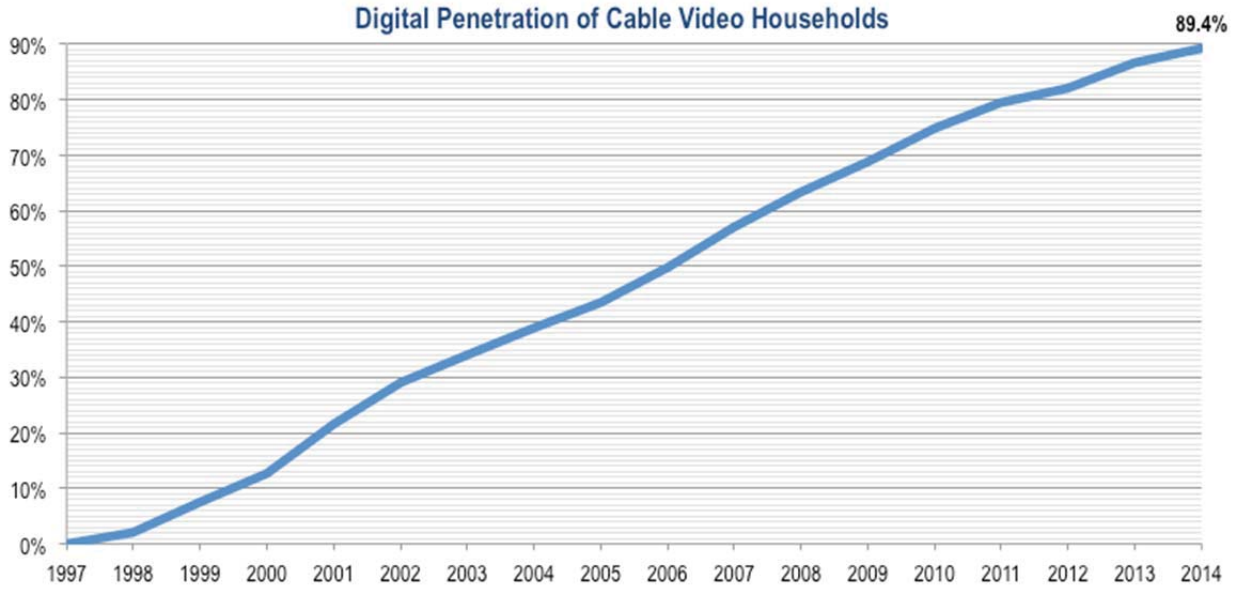
As has been the case every year, competition is evident not only from the market shares of MVPD competitors but also from the conduct of those competitors as they seek to lure and retain customers. Attracting customers requires investing in the latest technology and ever-higher quality content. In 2014, cable operators invested a record $16.2 billion in infrastructure upgrades to improve Internet offerings and video services. While cable's 2014 investment is impressive, it is merely one year in a multi-decade investment totaling over $230 billion since 1996.



Source: NCTA Analysis of SNL Kagan Data

[10] *In re Amendment to the Commission's Rules Concerning Effective Competition; Implementation of Section 111 of the STELA Reauthorization Act*, Report and Order, 30 FCC Rcd 6574 ¶ 9; *see also* NCTA Comments filed in MB Dkt. No. 15-53 at 2,5 (Apr. 9, 2015).

As we have noted in previous comments, the billions of dollars that cable operators invest in their networks year after year have paved the way for the next generation of video distribution.[11] By transitioning to digital transmission technologies, network capacity has increased, allowing high-definition video, video-on-demand, and cloud DVR services to coexist with ever-faster Internet services. Digital services provide cable customers with more extensive programming options and are reaching more customers every year. At the end of 2014, more than 89 percent of cable video customers received digital video service.



Source: NCTA Analysis of SNL Kagan Data

On top of the strong platform provided by network upgrades and new digital technology, cable operators have continued to deliver innovative products to their customers. Many operators now provide apps for smartphones and tablets that enable functionalities such as access to DVR controls, viewing of live and on-demand cable video programming, voice search, and channel guides.[12] Cable operators offer more capacity for DVR recordings to more customers

[11] *See* NCTA Comments filed in MB Dkt. 14-16 at 6-8 (Mar. 21, 2014) (describing cable operators' continued investment in services and infrastructure).

[12] *See* Cox, *About the Contour App, at* http://www.cox.com/residential/support/tv/article.cox?articleId=ee838930-c7d7-11e2-caa8-000000000000 (last visited Aug. 17, 2015); Comcast, *Xfinity TV Go app, at*

via Cloud DVR services that store recordings in a datacenter rather than a set-top box.[13] Some operators are designing equipment that moves the user-interface of the set-top box to the cloud, allowing customer-premises equipment with limited processing power to display detailed visual interfaces atop high quality cable video programming.[14]

The ways in which video customers consume content continue to change rapidly. To adapt to customers' rapidly changing tastes, cable operators are offering new bundles of programming services, including TV, DVR, and video-on-demand. These bundles include varying levels of programming services, from the basic tier up through hundreds of channels and thousands of shows. In some cases, these bundles include phone and Internet service at various speeds and capabilities. Across the MVPD marketplace, consumers are able to choose from hundreds of sources of video content.

Congress was concerned, when it enacted the provisions of the 1992 Cable Act (including the requirement to prepare these annual video competition reports), about the development of competitive sources of video programming unaffiliated with cable operators. Today, even the Commission has conceded that there are more such programming networks than it can count.[15] Vertical integration between programming networks and cable operators remains at an historic low, with little change in the number of networks owned by the largest cable operators as of the

---

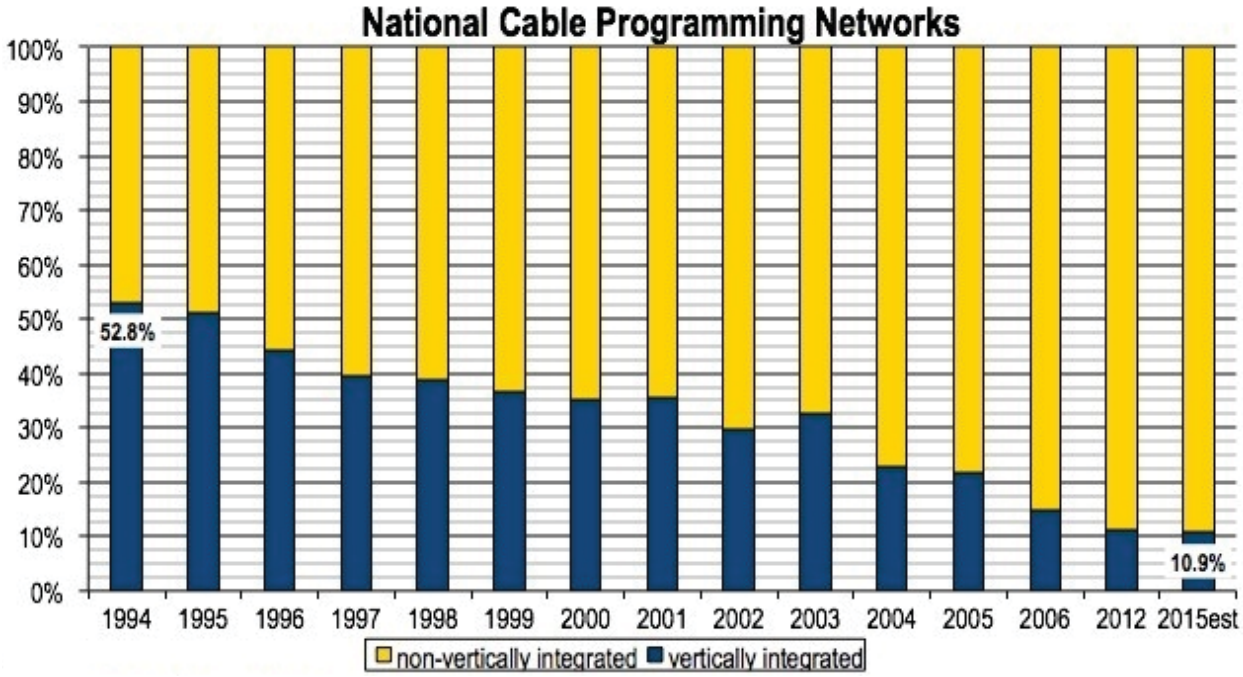
http://my.xfinity.com/learn/xfinitytvgo/ (last visited Aug. 17, 2015); Time Warner Cable, *TWC TV – Your World Is Always On, at* http://www.timewarnercable.com/en/tv/features/twc-tv.html (last visited Aug. 17, 2015); Charter, *Spectrum TV App, at* https://www.charter.com/browse/content/dlp-20a (last visited Aug. 17, 2015).

[13] *See* Todd Spangler, *Comcast's Cloud DVR Now Streams Recordings over Any U.S. Internet Connection,* Variety.com, Oct. 1, 2014, *available at* http://variety.com/2014/digital/news/comcasts-cloud-dvr-now-streams-recordings-over-any-u-s-internet-connection-1201318214/.

[14] *See* Jeff Baumgartner, *Charter Eyes 2015 For Wide Cloud UI Rollout*, Multichannel News, Jul. 31, 2014, *available at* http://www.multichannel.com/news/tv-apps/charter-eyes-2015-wide-cloud-ui-rollout/382877.

[15] *See* NCTA Comments filed in MB Dkt. 14-16 at 10, note 13 (Mar. 21, 2014); *see also Annual Assessment for the Status of Competition in the Market for the Delivery of Video Programming*, Fifteenth Report, 28 FCC Rcd 10496 (2013) ¶ 38 ("Fifteenth Report"); *Annual Assessment for the Status of Competition in the Market for the Delivery of Video Programming*, Fourteenth Report, 27 FCC Rcd 8610 (2012) ¶ 42 ("Fourteenth Report").

end of 2014.[16] As the Commission noted previously, only one of the top 20 most viewed cable networks is wholly owned by a cable operator.[17]



Source: NCTA Analysis of FCC, SNL Kagan Data

The result of the fierce competition that exists among all these networks to entice viewers to choose to watch their programming has been a new Golden Age of television.[18] Consumers today enjoy more content, more variety and diversity in video content – presented in brilliant HD quality – than ever before. These content providers offer a diversity of viewpoints, and a dizzying array of niche programs for smaller yet passionate audiences. Content offerings now run the gamut – from compelling scripted dramas, situation comedies, educational content, and

---

[16] *See* NCTA Comments filed in MB Dkt. No. 15-53 at 9-11 (Apr. 9, 2015).

[17] *Annual Assessment for the Status of Competition in the Market for the Delivery of Video Programming*, Sixteenth Report, 30 FCC Rcd 3253 (2015) ¶ 34 ("Sixteenth Report"); *see also* Sixteenth Report, Appendix B, Table B-1; David Lieberman, Lisa de Moraes, *Cable TV Networks Wrap 2014*, Deadline, Dec. 31, 2014, *available at* http://deadline.com/2014/12/cable-television-2014-review-usa-network-espn-1201338597/.

[18] *See* D. Carr, *Barely Keeping Up in TV's Golden Age*, New York Times, (Mar. 9, 2014), http://www.nytimes.com/2014/03/10/business/media/fenced-in-by-televisions-excess-of-excellence.html?_r=0.

kids programming, to sports, cooking shows, and news and public affairs – and are available on a wide array of viewing platforms and services.

With competition flourishing among MVPDs and an enormous array of competing program networks, most of which are unaffiliated with cable operators, the marketplace hardly resembles the one that existed in 1992 – the one, that is, that caused Congress to worry about a lack of competition in the video marketplace. Competition now characterizes both the MVPD marketplace and the video programming marketplace. And that is without even taking into account the massive effects of the Internet on the growing number of competitive choices and on competitive conduct by MVPDs and programmers.

II. THE INTERNET CONTINUES TO MASSIVELY EXPAND COMPETITIVE OPTIONS FOR CONSUMERS AND DRIVE INNOVATION IN THE VIDEO MARKETPLACE.

After all these years of video competition reports, there is, as discussed above, no remaining doubt that both the MVPD marketplace and the programming marketplace are vigorously competitive. In a competitive marketplace, existing competitors and new entrants can be counted on to innovate and experiment with new technologies, business models and pricing in a continuing effort to gain a competitive edge. That is why, when most households in the United States had only a single franchised cable operator available to receive multichannel service, Congress and the Commission took steps to promote and protect the entry of new video competitors such as DBS and (later) the phone companies.

Even in a vibrantly competitive marketplace, new entrants can add to the innovation and diversity of options and stimulate competitive responses that provide greater value to consumers. The difference is that in such a marketplace, it is competition itself – and not government intervention – that best determines which entrants, which innovations and which options succeed in providing that greater value to consumers.

The Internet – in particular, the high-speed broadband Internet service originally introduced to consumers by cable operators at the turn of the century and now offered by an array of wireline and wireless providers – has spawned a huge and ever-expanding array of new entrants into the video marketplace. Competition among these new entrants and between them and previously existing video programming networks and distributors has resulted not only in more choices of program content for consumers, but also in innovations and experiments in the ways in which such programming is packaged and distributed and in the ways (and places) in which programming can be viewed. Perhaps most significantly, the Internet and all the innovations it has spawned is fundamentally changing consumers' viewing habits, viewing choices, viewing expectations, and viewing options. Marketplace forces will continue to determine which of these innovations most appeal to consumers and which of these competitors succeed.

In the early days of broadband Internet service, online video programming was still a novelty, mainly viewed on a small portion of a desktop or laptop computer screen. But technology has changed all that. First of all, compression technology now makes it possible to transmit video programming in high definition, viewable on the same large flat-screen HD television sets that consumers use to watch broadcast and cable programming. This means that virtually anything that is available on the Internet can be viewed on television sets by attaching a computer to an input on the set.

What has made such online viewing even easier – and therefore virtually ubiquitous – is the availability of an array of new Internet-enabled devices that deliver Internet content directly to television sets, with remote controls and apps that enable viewers to select Internet content as easily as content from their cable or over-the-air providers. For example, Apple, Roku,

Microsoft (Xbox), Amazon, and Google all provide such boxes.[19] Roku, Amazon, and Google also provide small "sticks," which, when inserted into a television set's HDMI input, provide similar functionality.[20] Each of these devices include apps that include ready access to a wide assortment of free and subscription online services, including not only those like Netflix, Amazon, Hulu, and YouTube that have already become familiar household names, but also many newer online entrants that aggregate or offer their own video content. In addition, television set manufacturers now offer "smart" TVs that provide similar access to Internet content without requiring any additional equipment at all. If all of those devices do not suffice to access online video programming, even Blu-ray players and gaming consoles often include "smart" functionality that enables streaming online video programming.

At the same time that online services have become seamlessly available on large HD screens in the home, technology has also made them readily viewable on mobile devices – smart phones, tablets, and laptop computers – inside and outside the home. Those same apps that are available on in-home devices and smart TVs are also available on phones and tablets. This makes it possible to view online video virtually anywhere in the home and – as Wi-Fi hotspots become more and more available alongside wireless service – virtually anywhere *outside* the home.

The seamless and ubiquitous availability of all these online services makes them significant additional competitors in the video marketplace. While the Commission asks, in

---

[19] Apple, *Apple TV*, *at* http://www.apple.com/appletv/ (last visited Aug. 17, 2015); Roku, *Roku 3*, *at* https://www.roku.com/products/roku-3 (last visited Aug. 17, 2015); Microsoft, *Xbox One has the best games and entertainment*, *at* http://www.xbox.com/en-US/xbox-one/entertainment (last visited Aug. 17, 2015); Amazon, *Amazon Fire TV*, *at* http://www.amazon.com/Fire-TV-streaming-media-player/dp/B00CX5P8FC (last visited Aug. 17, 2015); Google, *Nexus Player*, *at* http://www.google.com/nexus/player/ (last visited Aug. 17, 2015).

[20] Roku, *Roku Streaming Stick*, *at* https://www.roku.com/products/streaming-stick (last visited Aug. 17, 2015); Amazon, *Amazon Fire TV Stick*, *at* http://www.amazon.com/dp/B00GDQ0RMG (last visited Aug. 17, 2015); Google, *Chromecast*, at http://www.google.com/chrome/devices/chromecast/ (last visited Aug. 17, 2015).

particular, about "the extent of *substitution*" between these new services and MVPD services, it appears to recognize that focusing on households that purchase online services *instead* of an MVPD service only skims the surface of the full extent to which online services are already full-fledged competitors. There are, to be sure, a significant number of households that have already decided, for whatever reasons, that online services are all they need to satisfy their television viewing needs. We know about "cord-cutters" anecdotally, but there is also evidence that, while the *growth* in MVPD customers nationwide has been in decline for the last few years, the actual *number* of MVPD customers is now declining:

Source: Recode, MoffetNathanson estimates and analysis[21]

There are many possible explanations for declines in the growth rate, including the diminishing number of unserved households and the remaining effects still being felt from the recession. And seasonal variations in "churn" – cancellations of service – may also explain some quarterly changes in the number of MVPD customers. It also seems likely that at least some of these declines are attributable to the availability of online services as competitive alternatives.

[21] Peter Kafka, *The Beginning of the End of the TV Industrial Complex,* ReCode, Aug. 10, 2015, *available at* http://recode.net/2015/08/10/the-beginning-of-the-end-of-the-tv-industrial-complex/.

In any event, competition from online services need not – and does not always – take the form of offer an "either/or" choice for consumers. To attract as many consumers as possible, cable operators and other MVPDs typically offer a variety of options in addition to a "basic" tier that the law requires cable subscribers (but not subscribers to other MVPD or online services) to purchase.[22] These include, for example, optional packages of program networks, premium channels, pay-per view movies and other on-demand programming, and digital video recorders. Similarly, an online service can offer a variety of options that a customer might choose to purchase – or watch for free. For other consumers, online options are not sufficient to address all of their interests and habits but may supplement or substitute for programming options available from their MVPD.

For example, some consumers have decided that Netflix is all they need and forgo cable video service altogether. Others might choose it instead of certain optional offerings of the cable operator, such as a premium movie service. In that case, it's a competitor to program networks to the extent that it offers movies and also develops and releases original and exclusive content. Indeed, Netflix has 43 million U.S. subscribers – more than any other premium service.[23]

The clearest evidence that this competition between online services and MVPDs and between online services and cable program networks has already taken hold is not the small but growing number of "cord cutters" who choose an online service in lieu of an MVPD. Rather, it is the extent to which cable operators, other MVPDs, cable program networks, and online

---

[22] The fact that cable operators alone have such a mandatory basic tier requirement is obviously at odds with regulatory parity and artificially skews marketplace competition. In declining to impose a similar requirement on DirecTV as a condition of approval of the merger with AT&T, the Commission concluded that the merger proceeding was "not the appropriate venue" to address "broader concern[s] about the applicability of the basic tiering requirements." In the Matter of Applications of AT&T Inc. and DIRECTV For Consent to Assign or Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, MB Docket No. 14-90, ¶ 196 (rel. July 28, 2015).

[23] Netflix Inc., Quarterly Report (Form 10-Q) (Jul. 17, 2015) at 16, *available at* http://ir.netflix.com/sec.cfm.

services are innovating and responding to each other's presence in the marketplace. Cable customers do not need to "cut the cord" in order to take advantage of the technological innovations made possible by IP technology because cable operators and program networks have never stopped innovating themselves to incorporate such innovations into their own services. Can the video programming of online services be viewed on Internet-enabled devices inside and outside the home? Well, so can much of the programming developed by program networks and distributed by cable operators. Cable customers can install apps on their mobile devices that enable them to view programming on demand and, in many cases, where rights are available from the content owners, in real time as it is being transmitted on their cable systems.[24] Some cable systems also enable subscribers to record programming on their DVR service and stream that programming to their mobile devices via Wi-Fi connections to the Internet – or to download the recorded programming to their devices so that it can be viewed without an Internet connection.

In addition, cable operators and cable program networks are beginning to offer customers the option of purchasing some cable programming for viewing *only* on IP-enabled devices. For example, subscribers to Cablevision's "Optimum" Internet service can also purchase HBO Now – HBO's standalone online service.[25] And Comcast has introduced its "Stream" service which provides customers with IP versions of programming on the entry-level basic cable tier (including broadcast stations) and a premium network in their homes, delivered over Comcast's managed network, along with Streampix and HBO Now, which are delivered via the Internet.[26]

---

[24] *Supra*, note 12.

[25] Cablevision, *With HBO Now, all Optimum Online customers can get HBO, at* https://www.optimum.net/pages/tv/hbo-now.html (last visited Aug. 17, 2015).

[26] Comcast, *Introducing a New Streaming TV Service from Comcast, at* http://corporate.comcast.com/comcast-voices/a-new-streaming-tv-service-from-comcast (last visited Aug. 17, 2015).

Cable operators, program networks, and online service providers are experimenting with offerings that, in some cases, differentiate themselves from each other's services, while, in other cases, resemble each other's approach to providing value to consumers. For example, Netflix introduced the unique approach of releasing an entire 13-episode season of a series, enabling "binge viewing," in contrast to the traditional week-by-week release of episodes to which cable and broadcast networks have generally adhered. Amazon has adopted such an approach as well. On the other hand, Hulu has recently announced that it will follow the traditional approach to releasing its new original series, episode by episode.[27]

Cable operators used to offer most programming in two or three large packages or tiers, along with a handful of premium channels available on a per-channel basis. In recent years, as more and more of their customers are choosing to watch some programming on the Internet, operators have been consistently expanding the array of smaller optional packages from which consumers can assemble the options that they desire. Along with providing a multitude of additional viewing options for consumers, competition resulting from the Internet is driving operators to innovate, enhance and ensure the continued success of the cable model that has proven so successful in providing value to subscribers.

III. CONSUMERS ARE ABLE TO VIEW VIDEO PROGRAMMING ON MANY IP-ENABLED DEVICES.

When Section 629 of the Communications Act was drafted with the goal of spurring the "retail availability of navigation devices," almost all consumers had to lease a set-top box from the incumbent cable company to receive digital multichannel programming. DBS was in its infancy, telephone companies were prohibited from entering the MVPD business, and broadband

[27] Yvonne Villarreal, *The anti-binge? Hulu's original series will be released weekly*, Los Angeles Times, Aug. 9, 2015, *available at* http://www.latimes.com/entertainment/envelope/cotown/la-et-ct-the-anti-binge-hulu-original-series-to-take-on-weekly-release-approach-20150809-story.html.

did not exist. Against that backdrop, Section 629 was designed to give consumers some choice other than their cable company for equipment to access video programming.

This was no longer true by 2010, when the FCC issued a Notice of Inquiry to consider whether to require MVPDs to install a new "AllVid" box in homes for retail devices to receive service. By that time, satellite and telephone companies had become popular alternatives for multichannel service, and numerous over-the-top providers had emerged. Content providers were developing UltraViolet as a new distribution path, and MVPDs were developing TV Everywhere and home networking techniques for delivering their services to personal computers, IP connected devices, and other retail devices. The FCC wisely decided not to pursue the regulatory AllVid proposal.

In just five years since the FCC considered the AllVid proposal, consumer access to MVPD content over retail devices has increased dramatically and in ways unforeseen by the drafters of Section 629. With the introduction of tablets and smartphones, apps moved from the PC to millions of IP-enabled devices. All of the major MVPDs developed apps that enable consumers to access their video services on IP-enabled devices, including Apple iOS and Android tablets and smartphones, personal computers, Smart TVs (LG, Samsung, Sony, Toshiba), game consoles (PlayStation 3 & 4, Xbox 360 & One), Amazon Fire, and retail set-top boxes (Roku). *There have been over 56 million downloads of MVPD apps as of July 2015, with millions more occurring every month.* Roku, a retail set-top box that relies entirely on apps, has sold over ten million units in the United States. The most widely deployed IP-enabled retail devices number over 460 million – twice the number of set-top boxes in use. Ninety-six percent

(96%) of those retail devices can be served by one or more MVPD apps, and sixty-six percent (66%) can be served by all top 10 MVPD apps.[28]

Retail Device	United States Units	MVPD Apps
Android phones[29]	92,036,000	All top 10 MVPDs[30]
PCs & Macs w/Broadband[31]	85,358,000	All top 10 MVPDs
iOS phones[32]	71,449,000	All top 10 MVPDs
Xbox 360[33]	48,460,000	5 of the top 10 MVPDs
Android Tablets[34]	43,260,000	All top ten MVPDs
PlayStation 3[35]	29,160,000	2 of the top 10 MVPDs
iOS Tablets[36]	23,730,000	All top 10 MVPDs
Samsung TV[37]	14,740,800	4 of the top 10 MVPDs
Vizio TV[38]	12,151,200	0
Roku[39]	10,000,000	1 of the top 10

[28] For purposes of this chart, AT&T and DirecTV are considered separate MVPDs and MVPD apps.

[29] *comScore Reports January 2015 U.S. Smartphone Subscriber Market Share*, ComScore.com (Mar. 4, 2015), http://www.comscore.com/Insights/Market-Rankings/comScore-Reports-January-2015-US-Smartphone-Subscriber-Market-Share.

[30] The top 10 MVPDs are, in alphabetical order: AT&T, Bright House, Cablevision, Charter, Comcast, Cox, DirecTV, DISH, Time Warner Cable, and Verizon.

[31] Thom File and Camille Ryan, *Computer and Internet Use in the United States: 2013; American Community Survey Reports*, U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau (Nov. 2014), *available at* http://www.census.gov/history/pdf/2013computeruse.pdf.

[32] *The State of the Tablet Market: A TabTimes Executive Summary*, TabTimes.com, *available at* http://tabtimes.com/resources/the-state-of-the-tablet-market/.

[33] *Platform Totals*, VGChartz.com, *available at* http://www.vgchartz.com/analysis/platform_totals/.

[34] *Supra*, note 32.

[35] *Streaming Devices Sales in the United States in 2014 (in million units)*, Statista.com, *available at* http://www.statista.com/statistics/296641/streaming-devices-sales-united-states/.

[36] *Supra*, note 32.

[37] *Majority of US Internet Users to Use a Connected TV by 2015*, eMarketer.com (June 13, 2014), *available at* http://www.emarketer.com/Article/Majority-of-US-Internet-Users-Use-Connected-TV-by-2015/1010908; Robert Briel, *Samsung, Vizio Control US Smart TV Market*, Broadband TV News (Mar. 10, 2014), *available at* http://www.broadbandtvnews.com/2014/03/10/samsung-vizio-control-us-smart-tv-market/.

[38] *Supra*, note 37.

[39] Roku, *Roku Sets New TV Streaming Milestones*, (Sept. 16, 2014), *available at* https://blog.roku.com/blog/2014/09/16/10-million-roku-players-sold/.

		MVPDs
Apple TV[40]	8,800,000	N/A
Sony TV[41]	8,764,800	1 of the top 10 MVPDs
PlayStation 4[42]	8,650,000	2 of the top 10 MVPDs
Xbox One[43]	7,790,000	2 of the top 10 MVPDs
LG TV	6,500,000	2 of the top 10 MVPDs
Chromecast	4,000,000	1 of the top 10 MVPDs
Total Number of Retail Devices	469,849,800	

Delivery over MVPD apps to the PC or Mac has also soared.

MVPD	Subs (M)	PC (Windows/Mac OS X)
Comcast	22,600,000	Web app
DirecTV	20,300,000	Web app
DISH	14,100,000	Web app (DishAnywhere.com) and Native app (Slingplayer App)
TWC	11,400,000	Web app
AT&T U-verse	5,700,000	Web app
Verizon	5,300,000	Web app
Charter	4,400,000	Web app
Cox	4,300,000	Native app (Cox TV Connect)
Cablevision	2,700,000	Native app (Optimum)

Source: NCTA Analysis

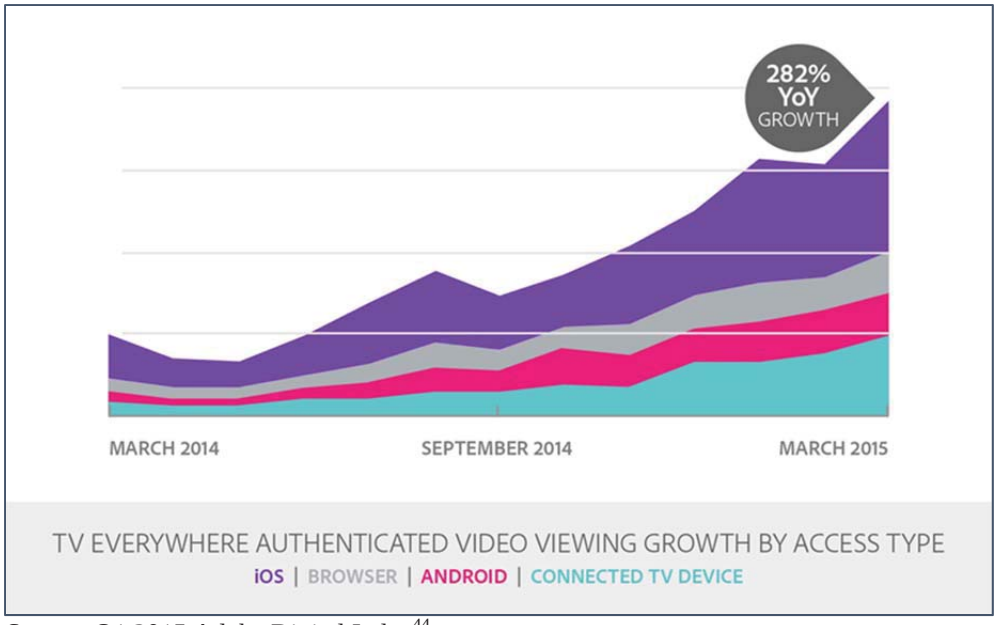
Consumer adoption of these new retail options has continued to grow dramatically, as consumers are using MVPD apps to watch more and more programming. A report from Adobe Digital Index found 282% year-over-year growth in TV Everywhere Viewing over tablets, smartphones, computers, and Smart TVs in the first quarter of 2015:

[40] *Supra*, note 35.

[41] *Supra*, note 37.

[42] *Supra*, note 35.

[43] *Supra*, note 35.



Source: Q1 2015 Adobe Digital Index[44]

Today, MVPDs are extending this apps approach to even more retail devices through a variety of methods, including new HTML5 streaming media standards developed by World Wide Web Consortium (W3C) and new methods for delivering apps through the home network, developed by the Digital Living Network Alliance (DLNA) and major consumer electronics manufacturers, chip manufacturers, and MVPDs. For example, DLNA's VidiPath enables delivery of full multichannel services using W3C protocols to DLNA-certified retail devices that support HTML5. VidiPath client devices are expected to be certified by the end of 2015.

Program networks and other content providers are also entering into distribution contracts with CE device manufacturers and other new video distributors. Sony obtained direct license rights from CBS, Viacom (Nickelodeon, MTV and Comedy Central), Scripps Network Interactive (HGTV, Food Network, and the Travel Channel), Discovery Communications (TLC, OWN, Animal Planet), NBCUniversal (Bravo, CNBC and E!), regional sports networks and others to offer an over-the-top service of 80 channels to its 75+ million Smart TVs, PlayStation

[44] Q12015 Digital Video Report, Adobe Digital Index, at 10, available at http://www.slideshare.net/adobe/adi-digital-videoq12015.

game consoles, and other Sony Internet-enabled devices in the U.S. Amazon offers its own subscription service through Kindles and millions of third-party devices. A streaming video service from Apple is expected to launch by next year. Sling TV's over-the-top service launched in 2015 with ESPN, AMC, Disney Channel, TNT, A&E, Lifetime, History, HGTV, Food Network, the Travel Channel, and several other program networks. Verizon will soon offer an over-the-top service.[45] Content providers like HBO and many others also provide content directly to subscribers via their own apps.

Had the FCC mandated in 2010 that MVPDs provide all content through an AllVid box, it would have precluded the development of MVPD cloud-based and application-based services that are ubiquitous today in enabling retail devices. Fortunately, the FCC decided in 2010 not to mandate an AllVid approach, and the market has proven the wisdom of that approach. There is even less reason today to support regulatory intervention in the video device marketplace when that marketplace is now delivering so many retail options for consumers and promises to deliver much more in the near future.

CONCLUSION

It has become a truism, after all these years and all these video competition inquiries, that vibrant competition in the video programming market has taken hold and is here to stay. Nevertheless, it is also apparent every year that in this dynamic and competitive marketplace, nothing stays the same.

Competition among MVPDs compels cable operators, telephone companies, DBS companies and over builders to invest in facilities upgrades, superior programming and new technologies and to offer their customers new optional services and functionalities. Competition

[45] Mike Farrell, *McAdam: Verizon OTT Product Coming In Second Half*, MULTICHANNEL NEWS (Jan. 6, 2015), *available at* http://www.multichannel.com/news/news-articles/mcadam-verizon-ott-product-coming-second-half/386678.

among program networks produces new and diverse high-quality, award-winning programming every year. And the options and innovations enabled by IP technology and the Internet not only create new online competitors but result in new innovative offerings from existing MVPDs and program networks. Dynamic competition is the hallmark of today's video marketplace, and it will continue to stimulate and select the innovations and the diverse video programming offerings that provide the greatest value to consumers.

Respectfully submitted,

/s/ Rick Chessen

Jim Partridge
Vice President
Industry & Technical Analysis

Galen Pospisil
Research Assistant

August 21, 2015

Rick Chessen
Michael S. Schooler
Loretta Polk
National Cable & Telecommunications Association
25 Massachusetts Avenue, N.W. – Suite 100
Washington, D.C. 20001-1431
(202) 222-2445